# Tech Specs

## Video Formats

- 525i 29.97
- 625i 25
- 720P 50, 59.94, 60
- 1080i 25, 29.97, 30
- 1080PsF 23.98, 24
- 1080p 24, 25, 30

| Input | Possible Output Formats | | |
|---|---|---|---|
| 525i59.94 | 525i59.94 | 720p59.94 | 1080i59.94 |
| 720p59.94 | 525i59.94 | 720p59.94 | 1080i59.94 |
| 1080i59.94 | 525i59.94 | 720p59.94 | 1080i59.94 |
| | | | |
| 1080pSF23.98 | 1080pSF23.98 | 1080i59.94 | 525i59.94 |
| | | | |
| 625i50 | 625i50 | 1080i50 | 720p50 |
| 720p50 | 625i50 | 1080i50 | 720p50 |
| 1080i50 | 625i50 | 1080i50 | 720p50 |
| | | | |
| 1080pSF24 | 1080pSF24 | 1080i60 | |
| 1080i60 | 1080i60 | 720p60 | |
| 720p60 | 720p60 | 1080i60 | |

- Notes:
  1. In the case of 1080pSF/23.98 input - and when 1080i59.94 (or 525) is selected as an output format, the FS2 automatically does 3:2 pulldown to get the correct frame rate. Similarly, in the case of 1080pSF/24 input, FS2 automatically does 3:2 pulldown to get the correct frame rate.
  2. When passing 24 or 60 framerate video, output is high definition.

## Video Input Digital

- Dual 3G-SDI, SMPTE-259/292/296, 8- or 10-bits
  - Single Link 4:2:2 (1 x BNC each)
- Dual Fiber 3G-SDI, SMPTE-259/292/296, 8- or 10-bits (optional)
  - Single-channel LC connector modules
  - Single-channel SC connector modules
  - Dual-channel LC connector modules
- HDMI v1.3 30 bits/pixel, RGB or YUV, 2.25 Gbps, SD, HD, 1080p-50/60

| | |
|---|---|
| **Video Input Analog** | - HD component YPbPr, SMPTE-274 (3 x BNC)<br>  - 12-bit A/D, 2x oversampling<br>- SD Component (3 x BNC)<br>  - SMPTE/EBU N10, Betacam 525 line, Betacam 525J<br>  - 12-bit A/D, 4x oversampling<br>  - +/- .25 dB to 5.5 MHz Y Frequency Response<br>  - +/- .25 dB to 2.5 MHz C Frequency Response<br>  - .5% 2T pulse response<br>  - <2 ns Y/C delay inequity<br>- SD Composite<br>  - 12-bit A/D, 4x oversampling |
| **Video Output Digital** | - Dual SD/HD/3G SDI, SMPTE-259/292/296, 8- or 10-bits<br>  - Single Link 4:2:2 (1 x BNC each)<br>- Dual Fiber (SC or LC) SD/HD/3G SDI, SMPTE-259/292/296, 8- or 10-bits (optional)<br>- HDMI v1.3 30 bits/pixel, RGB or YUV, 2.25 Gbps, SD, HD, 1080p-50/60 |
| **Video Output Analog** | - HD component YPbPr, SMPTE-274 (3 x BNC)<br>  - 12-bit D/A, 2x oversampling<br>- SD Component (3 x BNC)<br>  - SMPTE/EBU N10, Betacam 525 line, Betacam 525J<br>  - 12-bit D/A, 4x oversampling<br>  - +/- .25 dB to 5.5 MHz Y Frequency Response<br>  - +/- .25 dB to 2.5 MHz C Frequency Response<br>  - .5% 2T pulse response<br>  - <2 ns Y/C delay inequity<br>- SD Composite<br>  - 12-bit D/A, 4x oversampling |
| **Audio Input Digital** | - 16-channel, 24-bit SMPTE-259 SDI embedded audio, 48kHz sample rate, Synchronous<br>- 16-channel, 24-bit AES/EBU audio, 48kHz sample rate, Synchronous or Non-synchronous, Internal sample rate conversion (8 x XLR via 25-pin breakout cable) |
| **Audio Input Analog** | - 8-channel, 24-bit A/D analog audio, 48kHz sample rate, balanced (8 x XLR via 25-pin breakout cable)<br>  - +12dBu, +15dBU, +18dBu, +24dBu (Full Scale Digital)<br>  - +/- 0.2db 20 to 20kHz Frequency Response |
| **Audio Output Digital** | - 16-channel, 24-bit SMPTE-259 SDI embedded audio, 48kHz sample rate, Synchronous<br>- 16-channel, 24-bit AES/EBU audio, 48kHz sample rate, Synchronous or Non-synchronous, Internal sample rate conversion (8 x XLR via 25-pin breakout cable) |

| | |
|---|---|
| **Audio Output Analog** | • 8-channel, 24-bit D/A analog audio, 48kHz sample rate, balanced (8 x XLR via 25-pin breakout cable)<br>  • +12dBu, +15dBU, +18dBu, +24dBu (Full Scale Digital)<br>  • +/- 0.2db 20 to 20kHz Frequency Response |
| **Up-Conversion** | • Hardware 10-bit<br>• **Anamorphic:** full-screen<br>• **Pillar box 4:3:** results in a 4:3 image in center of screen with black sidebars<br>• **Zoom 14:9:** results in a 4:3 image zoomed slightly to fill a 14:9 image with black side bars<br>• **Zoom Letterbox:** results in image zoomed to fill full screen<br>• **Zoom Wide:** results in a combination of zoom and horizontal stretch to fill a 16:9 screen; this setting can introduce a small aspect ratio change |
| **Down-conversion** | • Hardware 10-bit<br>• **Anamorphic:** full-screen<br>• **Letterbox:** image is reduced with black top and bottom added to image area with the aspect ratio preserved<br>• **Crop:** image is cropped to fit new screen size |
| **Cross-conversion** | • Hardware 10-bit<br>• 1080i to 720P<br>• 720P to 1080i<br>• 720P to 1080PsF |
| **SD to SD aspect ratio conversion** | • **Letterbox:** This transforms SD anamorphic material to a letterboxed image.<br>• **H Crop:** Will produce a horizontally stretched effect on the image; transforms anamorphic SD to full frame<br>• **SD Pillarbox:** Will produce an image in the center of the screen with black borders on the left and right sides and an anamorphized image in the center<br>• **V Crop:** Will transform SD letterbox material to an anamorphic image. |
| **Timecode** | • SDI RP188 via SDI BNC |
| **Reference Input** | • Analog Color Black (1V) or Composite Sync (2 or 4V)<br>• Looping, non-terminating. |
| **Network Interface** | • 10/100 Ethernet (RJ-45)<br>• Embedded web server for remote control<br>• VTECS™ protocol for Remote Control Panel |

| User Interface | · Alphanumeric display, with dedicated buttons/knobs |
|---|---|

**Control**

· GPI in/out, 15-pin D-connector
  · Pinout is as follows :

| 1 | GND | 9 | GPI OUT 2 |
|---|---|---|---|
| 2 | GPI IN 1 | 10 | GPI I/O GND 3 |
| 3 | GPI IN 2 | 11 | GPI I/O GND 4 |
| 4 | GPI IN 3 | 12 | GPI OUT 3 |
| 5 | GPI I/O GND 1 | 13 | GPI OUT 4 |
| 6 | GPI I/O GND 2 | 14 | NC |
| 7 | GPI IN 4 | 15 | GND |
| 8 | GPI OUT 1 | | |

**Physical**

· Width: 17.25" (43.81cm)
· Depth: 14.5" (36.83cm)
· Height: 1RU, 1.75" (4.44cm)
· Weight: 7.85lb (3.56kg)
· Power: 100-240 VAC 50/60Hz (Dual, redundant power supplies), 55W typical; 80W max. 15A max.
· Environment:
  · Operating temperature: 0 to 40 degrees C
  · Relative humidity: 0 to 90%, non-condensing